

Trend Study 4R-2-01

Study site name: Deseret Burn.

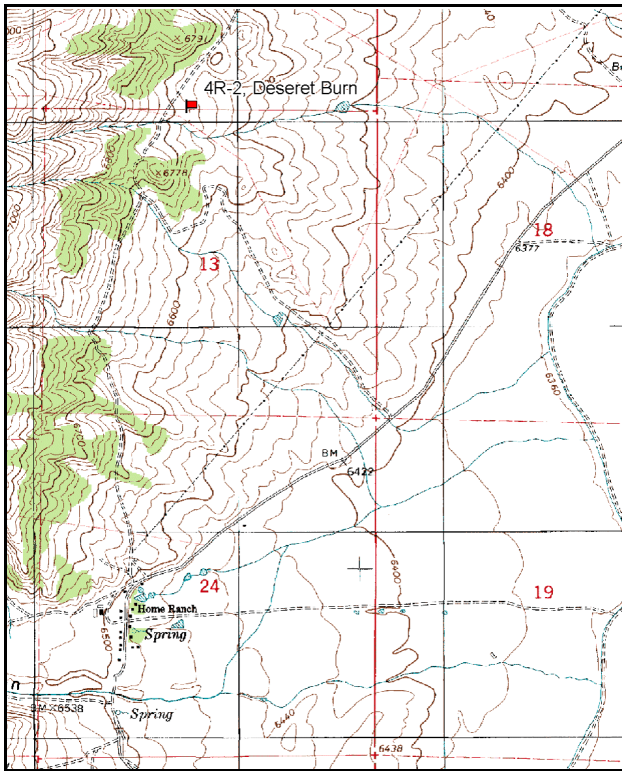
Vegetation type: Burned and Seeded.

Compass bearing: frequency baseline 320 degrees magnetic.

Frequency belt placement: line 1(11ft), line 2(34 ft), line 3(59 ft), line 4(71 ft), line 5 (95 ft).

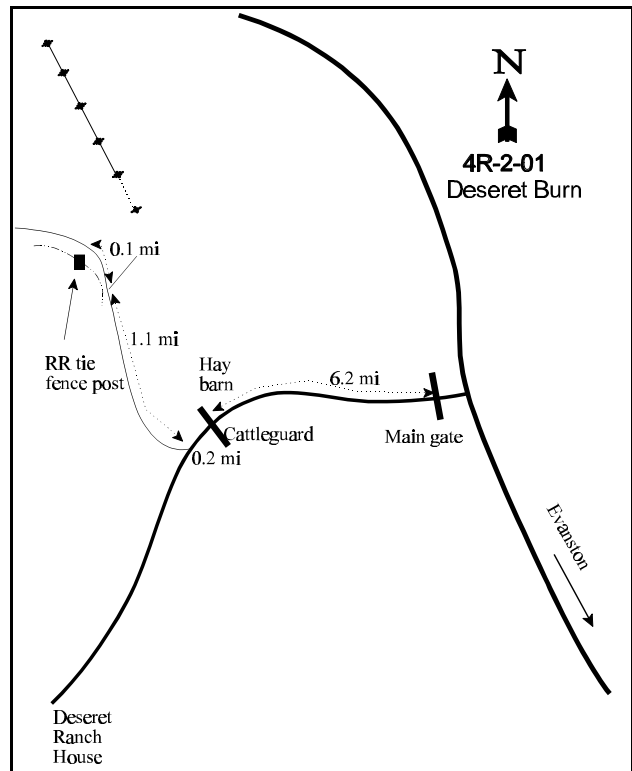
LOCATION DESCRIPTION

From the Deseret Land & Livestock main gate on highway 16 between Evanston and Woodruff, proceed west towards the Deseret ranch house 6.2 miles to a cattleguard. Continue 0.2 miles and turn right onto a two track. Follow the two track for 1.2 miles staying left. The 0-foot stake is 16 paces at 54 degrees magnetic from a rail road tie in the fence line. The baseline runs at 320 degrees magnetic.



Map Name: Neponset Reservoir NW

Township 8N, Range 6E, Section 13



Diagrammatic Sketch

UTM 45870412N 481752 E

DISCUSSION

Trend Study No. 4R-2

The Deseret Land and Livestock - Burn study is located approximately 1½ miles north of the ranch house at an elevation of 6,700 feet. Slope is variable up to 12%, and aspect is to the east. The study area burned in 1996, and was aerially seeded and chained afterwards. Shrubs were seeded either by a dribbler or planted from root stock. The study was established to monitor vegetation recovery following treatment. There was very little wildlife use on this site when it was established in 1997. Elk, deer, and cattle sign were present when the study was read in 2001. A pellet group transect read along the vegetation baseline in 2001 estimated 36 elk days use/acre (88 edu/ha), 4 deer days use/acre (10 ddu/ha), and 33 cow days use/acre (82 cdu/ha).

Soils are sandy clay loam in texture with a neutral soil reaction (6.7 pH). Effective rooting depth was estimated at just over 12 inches. The majority of the rock in the profile occurs 4 to 8 inches below the surface. Vegetation and litter cover were both very low in 1997, the first growing season following the seeding. Conversely, bare ground was high at over 50%. In 2001, the vegetative community has greatly increased resulting in much better protective ground cover. Vegetation and litter cover both increased, while bare ground decreased to 23%. An erosion condition class assessment done in 2001 determined soils to be stable.

Very little browse is currently present on the site even though there was a concerted effort to establish them by seeding and planting bare-root stock, browse still remains limited. Wyoming big sagebrush, fourwing saltbush, and low rabbitbrush were sampled in 2001. Wyoming big sagebrush density is estimated at 60 plants/acre. Fourwing saltbush was estimated at 360 plants/acre in 1997, but only 100 plants/acre in 2001. Apparently, some of the young plants sampled in 1997 did not establish and persist. Recruitment from young plants is low at only 20 plants/acre in 2001. Low rabbitbrush density was estimated at 1,600 plants/acre in 2001. This species appears to have a stable population with mostly mature and decadent plants, although there are few young in the population.

The herbaceous understory is dominated by grasses. The most abundant perennial species include Sandberg bluegrass, crested wheatgrass, intermediate wheatgrass, and western wheatgrass. Desirable, but less abundant species include needle-and-thread, a *Carex*, and bluebunch wheatgrass. Sum of nested frequency for all perennial grasses increased by 27% in 2001. Cheatgrass was the most abundant individual species after significantly increasing in nested frequency in 2001. Further increases in cheatgrass will hopefully be curtailed by the diversity and competition of perennial grasses on the site. Forbs are not particularly abundant on the site, especially in 2001. Seeded perennial forbs such as alfalfa and small burnet are rare. With the exception of pale alyssum, annual forbs are infrequent as well.

2001 TREND ASSESSMENT

Trend for soil is up. Protective cover from vegetation and litter have increased, and bare ground has decreased. As a result, the ratio of bare ground to protective cover (vegetation, litter, and cryptogams) improved in 2001. Trend for browse is slightly down. Fourwing saltbush density decreased and use increased. Most of the young plants sampled in 1997 apparently did not persist. Wyoming big sagebrush has an estimated density of 60 plants/acre, but recruitment is low. Trend for the herbaceous understory is stable. The loss in frequency of perennial forbs was balanced by the increase in frequency of perennial grasses. A negative aspect was the increase in cheatgrass.

TREND ASSESSMENT

soil - up (5)

browse - slightly down (2)

herbaceous understory - stable (3)

HERBACEOUS TRENDS --

Herd unit 4R, Study no: 2

T y p e	Species	Nested Frequency		Quadrat Frequency		Average Cover %	
		'97	'01	'97	'01	'97	'01
G	Agropyron cristatum	153	148	56	54	3.52	5.30
G	Agropyron intermedium	93	*160	40	54	1.70	4.90
G	Agropyron smithii	47	*95	14	31	1.10	2.47
G	Agropyron spicatum	30	*1	9	1	.51	.00
G	Bromus japonicus (a)	-	2	-	1	-	.00
G	Bromus tectorum (a)	56	*295	20	79	.65	6.25
G	Carex spp.	22	25	7	6	.72	.51
G	Elymus cinereus	-	1	-	1	-	.03
G	Oryzopsis hymenoides	3	-	2	-	.15	-
G	Poa fendleriana	6	-	2	-	.18	-
G	Poa secunda	144	175	52	59	2.12	4.11
G	Sitanion hystrix	-	1	-	1	.00	.00
G	Stipa comata	7	*34	2	15	.06	.31
Total for Annual Grasses		56	297	20	80	0.64	6.25
Total for Perennial Grasses		505	640	184	222	10.09	17.67
Total for Grasses		561	937	204	302	10.74	23.93
F	Agoseris glauca	-	1	-	1	-	.00
F	Alyssum alyssoides (a)	-	*292	-	76	-	1.38
F	Allium spp.	32	*-	17	-	.11	-
F	Arabis spp.	3	-	1	-	.00	-
F	Astragalus spp.	2	3	1	3	.03	.01
F	Balsamorhiza sagittata	2	1	1	1	.06	.33
F	Chenopodium spp. (a)	-	-	-	-	.41	-
F	Crepis acuminata	-	2	-	1	-	.03
F	Cymopterus spp.	-	1	-	1	-	.00
F	Erigeron spp.	14	-	4	-	.24	-
F	Gayophytum ramosissimum (a)	76	*-	30	-	1.69	-
F	Gilia spp. (a)	18	27	8	9	.26	.07
F	Lappula occidentalis (a)	14	*72	9	27	.26	.18
F	Lactuca serriola	-	-	-	-	.06	-

T y p e	Species	Nested Frequency		Quadrat Frequency		Average Cover %	
		'97	'01	'97	'01	'97	'01
F	Linum lewisii	13	*-	6	-	.09	-
F	Medicago sativa	12	17	4	7	.24	.63
F	Phlox longifolia	54	*35	22	12	.21	.08
F	Sanguisorba minor	65	*4	30	2	1.84	.01
F	Sphaeralcea coccinea	2	3	1	1	.03	.15
F	Tragopogon dubius	-	4	-	2	-	.03
F	Unknown forb-perennial	3	4	1	2	.03	.31
Total for Annual Forbs		108	391	47	112	2.63	1.64
Total for Perennial Forbs		202	75	88	33	2.97	1.61
Total for Forbs		310	466	135	145	5.60	3.25

* Indicates significant difference at alpha = 0.10 (annuals excluded)

BROWSE TRENDS --

Herd unit 4R, Study no: 2

T y p e	Species	Strip Frequency		Average Cover %	
		'97	'01	'97	'01
B	Artemisia tridentata wyomingensis	0	3	-	.03
B	Atriplex canescens	14	5	.04	.00
B	Chrysothamnus viscidiflorus viscidiflorus	33	35	.83	1.58
B	Eriogonum microthecum	0	1	-	-
B	Opuntia spp.	2	3	-	.00
Total for Browse		49	47	0.87	1.62

BASIC COVER --

Herd unit 4R, Study no: 2

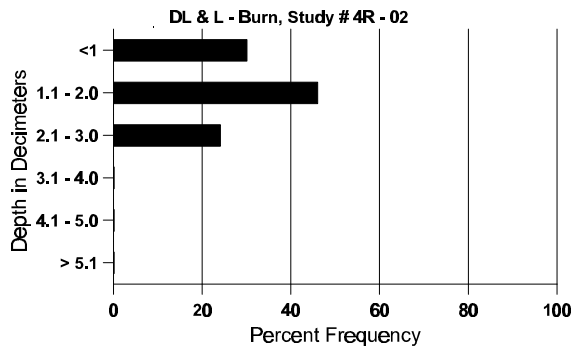
Cover Type	Nested Frequency		Average Cover %	
	'97	'01	'97	'01
Vegetation	342	465	16.43	38.72
Rock	255	98	3.81	1.23
Pavement	375	262	10.35	2.20
Litter	462	481	5.63	55.69
Cryptogams	27	18	.48	.30
Bare Ground	473	291	51.37	23.37

SOIL ANALYSIS DATA --

Herd Unit 4R, Study no: 02, Deseret Burn

Effective rooting depth (in)	Temp °F (depth)	PH	%sand	%silt	%clay	%OM	PPM P	PPM K	dS/m
12.4	74.8 (12.4)	6.7	49.6	19.5	30.9	2.7	27.7	249.6	0.8

Stoniness Index



PELLET GROUP FREQUENCY --

Herd unit 4R, Study no: 2

Type	Quadrat Frequency	
	'97	'01
Rabbit	-	5
Elk	-	14
Deer	-	5
Cattle	-	13

Pellet Transect			
Pellet Groups per Acre		Days Use per Acre (ha)	
'97	'01	'97	'01
-	-	-	-
9	461	1 (2)	36 (88)
-	52	-	4 (10)
-	400	-	33 (82)

BROWSE CHARACTERISTICS --

Herd unit 4R, Study no: 2

A G R E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches)		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4		Ht.	Cr.	
Artemisia tridentata wyomingensis																		
Y	97	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	01	1	-	-	-	-	-	-	-	-	1	-	-	20			1	
M	97	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
	01	2	-	-	-	-	-	-	-	-	2	-	-	40	8	9	2	
X	97	-	-	-	-	-	-	-	-	-	-	-	-	100			5	
	01	-	-	-	-	-	-	-	-	-	-	-	-	180			9	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'97		00%			00%			00%										
'01		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'97	0	Dec:	-			
												'01	60		-			
Atriplex canescens																		
S	97	1	-	-	-	-	-	-	-	-	1	-	-	20			1	
	01	1	-	-	-	-	-	-	-	-	1	-	-	20			1	
Y	97	9	-	-	-	-	-	-	-	-	9	-	-	180			9	
	01	-	1	-	-	-	-	-	-	-	1	-	-	20			1	
M	97	9	-	-	-	-	-	-	-	-	9	-	-	180	23	23	9	
	01	2	2	-	-	-	-	-	-	-	4	-	-	80	19	18	4	
X	97	-	-	-	-	-	-	-	-	-	-	-	-	40			2	
	01	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'97		00%			00%			00%			-72%							
'01		60%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'97	360	Dec:	-			
												'01	100		-			
Chrysothamnus viscidiflorus viscidiflorus																		
Y	97	1	-	-	-	-	-	-	-	-	1	-	-	20			1	
	01	2	-	-	-	-	-	-	-	-	2	-	-	40			2	
M	97	72	-	-	-	-	-	-	-	-	72	-	-	1440	12	17	72	
	01	58	-	-	-	-	-	-	-	-	58	-	-	1160	10	18	58	
D	97	1	-	-	-	-	-	-	-	-	-	-	-	20			1	
	01	20	-	-	-	-	-	-	-	-	18	-	-	400			20	
X	97	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	01	-	-	-	-	-	-	-	-	-	-	-	-	20			1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'97		00%			00%			01%			+ 8%							
'01		00%			00%			03%										
Total Plants/Acre (excluding Dead & Seedlings)												'97	1480	Dec:	1%			
												'01	1600		25%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Eriogonum microthecum																		
M	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	01	1	-	-	-	-	-	-	-	-	-	1	-	-	20	-	-	1
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'97		00%			00%			00%										
'01		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)														'97	0	Dec:	-	
														'01	20		-	
Opuntia spp.																		
Y	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	01	1	-	-	-	-	-	-	-	-	-	1	-	-	20			1
M	97	2	-	-	-	-	-	-	-	-	2	-	-	-	40	3	8	2
	01	4	-	-	-	-	-	-	-	-	4	-	-	-	80	3	6	4
X	97	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'97		00%			00%			00%			+60%							
'01		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)														'97	40	Dec:	-	
														'01	100		-	
Tetradymia canescens																		
M	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0	25	22	0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'97		00%			00%			00%										
'01		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)														'97	0	Dec:	-	
														'01	0		-	